VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Minor, Industrial permit. The effluent limitations contained in this permit will maintain the Water Quality Standards (WQS) of 9 VAC 25-260. The proposed discharge will result from the operation of a concentrated, aquatic animal (trout) production facility (SIC Code: 0273 – Animal Aquaculture, 0921 – Fish Hatcheries). This permit action consists of reissuing the permit with revisions to the permit, as needed, due to changes in applicable laws, guidance, and available technical information.

1. Facility Name and Address:
   Coursey Springs Fish Cultural Station
   PO Box 996
   Verona, VA 24482
   Location: 300 Hatchery Lane, Millboro, VA 24460

2. Permit No. VA0091251; Expiration Date: February 28, 2013

3. Owner: Virginia Department of Game and Inland Fisheries
   Contact Name: Mr. Ron Hughes
   Title: Land and Facilities Manager Region 4
   Telephone No: (540) 248-9360

4. Description of Treatment Works: Appendix A
   Total Number of Outfalls: 1

5. Application Complete Date: November 1, 2012

   Permit Writer: Eric Millard Date: December 5, 2012
   Reviewed By: Dawn Jeffries Date: December 6, 2012

   Public Comment Period: January 10, 2013 to February 9, 2013

6. Receiving Stream Name: Spring Run (007, 008)
   River Mile: 0.0297 (007), 0.0198 (008)
   Use Impairment: Yes
   Special Standards: None
   Tidal Waters: No
   Watershed Name: VAV-I14R, Cowpasture River/Thompson Creek/Dry Run
   Basin: James (Upper); Subbasin: N/A
   Section: 12; Class: IV

7. Operator License Requirements per 9 VAC 25-31-200.C: None

8. Reliability Class per 9 VAC 25-790: N/A

9. Permit Characterization:
   ☐ Private ☐ Federal ☑ State ☐ POTW ☐ PVOTW
   ☐ Possible Interstate Effect ☐ Interim Limits in Other Document (attach copy of CSO)

10. Discharge Location Description and Receiving Waters Information: Appendix B

11. Antidegradation (AD) Review & Comments per 9 VAC 25-260-30:
    Tier Designation: Tier 2

    The State Water Control Board's WQS include an AD policy. All state surface waters are provided one of three levels of AD protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 waters have water quality that is better than the WQS. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 waters are exceptional waters and are so designated by regulatory amendment. The AD policy prohibits new or expanded discharges into exceptional waters.

    The AD review begins with a Tier determination. Spring Run (Outfalls 007,008) in the immediate vicinity of the discharge is designated as a Tier 2 water, because there is no available data indicating Water Quality Standards (WQS) are being violated or just barely being met. AD restrictions apply to Spring Run, however, the permit imposes no WQS parameter limitations requiring AD baselines to be calculated.

    Pheasanty Run, to which Spring Run is a tributary and enters just downstream of the discharge points, is listed as impaired for the General Standard (benthics). A TMDL has been developed for the impairment and identified Organic Solids as the cause of the impairment. The Pheasanty Run TMDL includes a WLA of 1,231 pounds of organic solids per year for this facility.

12. Site Inspection: Performed by Eric Millard on October 2, 2012

13. Effluent Screening and Effluent Limitations: Appendix C

14. Whole Effluent Toxicity (WET) Program Requirements per 9 VAC 25-31-220.D: N/A

15. Solids generated by fish production are managed in accordance with the Solids Management Plan (SMP) approved January 4, 2012.

16. Bases for Special Conditions: Appendix D

17. Material Storage per 9 VAC 25-31-280.B.2: This permit requires that the facility's O&M Manual include information to address the management of wastes, fluids, and pollutants which may be present at the facility, to avoid unauthorized discharge of such materials.

18. Antibacksliding Review per 9 VAC 25-31-220.L: This permit complies with the antibacksliding provisions of the VPDES Permit Regulation.

19. Impaired Use Status Evaluation per 9 VAC 25-31-220.D: Spring Run in the vicinity of the discharge is not listed in Part II of the current 303(d) list of impaired waters; however, Pheasanty Run, to which Spring Run is a tributary, is listed in Part II of the current 303(d) list of impaired waters for the General Standard (benthics). A TMDL has been established for this impairment, and identifies Organic Solids as the cause for the impairment. The facility discharges a parameter of concern and the TMDL established a WLA of 1,231 pounds of organic solids per year.

20. Regulation of Users per 9 VAC 25-31-280.B.9: N/A

21. Storm Water Management per 9 VAC 25-31-120: Application Required? ☐Yes ☑No
    The SIC Code for this facility does not fall within the categories requiring storm water special conditions.

22. Compliance Schedule per 9 VAC 25-31-250: There are no compliance schedules included in the reissued permit.

23. Variances/Alternative Limits or Conditions per 9 VAC 25-31-280.B, 100.J, 100.P, and 100.M: None

24. Financial Assurance Applicability per 9 VAC 25: N/A – This facility does not serve private residences.

25. Virginia Environmental Excellence Program (VEEP) Evaluation per § 10.1-1187.1-7: At the time of this reissuance, is this facility considered by DEQ to be a participant in the Virginia Environmental Excellence Program in good standing at either the Exemplary Environmental Enterprise (E3) level or the Extraordinary Environmental Enterprise (E4) level? ☐ Yes ☑ No

26. Nutrient Trading Regulation per 9 VAC 25-820: See Appendix C
    General Permit Required: ☐ Yes ☑ No

27. Threatened and Endangered (T&E) Species Screening per 9 VAC 25-260-20 B.8: Because this is not a permit issuance or a reissuance that allows for increased discharge flows, and DCR and DGIF have not requested an opportunity to review the application, T&E screening is not required.

28. Public Notice Information per 9 VAC 25-31-280.B: All pertinent information is on file, and may be inspected and copied by contacting Eric Millard at: DEQ-Valley Regional Office, P.O. Box 3000, Harrisonburg, Virginia 22801, Telephone No. (540) 574-7813, eric.millard@deq.virginia.gov.

    Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

29. Historical Record:

    5/27/97 – VPDES Permit No. VA0006491 was signed this date, effective date was 6/2/97 and expiration date was 6/02/02.

    11/30/01 – The applicant submitted a Registration Statement for coverage of the facility under the General VPDES Permit for Concentrated Aquatic Animal Production Facilities.

    6/20/02 – DEQ notified the applicant that they had received coverage for the facility under the General Permit (VAG131009). The General Permit expired 3/5/03.

    2/24/03 – VPDES Permit No. VA0091251 was signed this date, effective date was 3/06/03 and the expiration date was 3/5/08.

    5/24/05 – VPDES Permit No. VA0091251 was modified on this date, removing numeric TSS limitations, and requiring implementation of specified BMPs.

    March 2010 – The facility upgrade included a microfiltration wastewater treatment system and installation of a 25’ diameter clarifier. The upgrade included the removal of Outfalls 001-004 discharging to Pheasanty Run, and Outfall 006 discharging to Spring Run.

APPENDIX A

FACILITY AND TREATMENT WORKS DESCRIPTIONS

Existing Facility and Treatment Works

Wastewater is produced by the production of trout grown in raceways and operation of a hatchery using flowing spring water. The discharge is continuous and the quantity varies with the volume of water generated by the spring. The quality of the discharge varies depending on number and size of fish in production, amount and quality of feed provided to the fish, activities performed within the raceways (e.g., feeding, maintenance, harvesting), and ambient temperature.

Fish from this facility are used for seasonal stocking of Commonwealth streams, rivers, and lakes by the VDGIF. The facility does not include a slaughter operation, and the permit does not authorize the discharge of treated or untreated process wastewater to surface waters from any fish processing operation including wastewater resulting from butchering or cleaning, washing, packing and processing-related cleaning of facilities or equipment.

The permit application indicates the following chemicals are used at the facility to treat infections: Chloramine –T, Formalin, Sodium Chloride, Romet TC, Terrmycin, Aquaflor. These chemical uses are addressed in the O&M Manual, and may not be discharged in amounts that are toxic to aquatic life and shall not have detectable levels of chlorine.

Domestic sewage generated at this location is treated onsite. The permit does not authorize the discharge of treated or untreated sewage to surface waters.

The trout farm typically produces the following types, numbers, and pounds of fish annually:

Species of Fish	Pounds of Fish	
	Total Yearly	Maximum Present
Rainbow Trout	150,000 lbs.	130,000 lbs.
Brown Trout	60,000 lbs.	50,000 lbs.
Brook Trout	60,000 lbs.	50,000 lbs.

Treatment Works Description and Schematic

Wastewater treatment will be accomplished through three Hydrotech HDF 1606-2H drum filters. The full flow rotary micro-screen drum filters are installed with 30 µm mesh panels. All waste from the filters is pumped into a 25 foot diameter Westech Suction header clarifier. The influent is fed into a circular feedwell by means of a horizontal pipe. The liquid/solid mixture flows out radially toward the launder. Solids settle to the tank floor where they are collected by the suction header and are removed to an underflow sludge line into the circular sludge storage tank. The clarified overflow is removed at the tank periphery. Detention time is set to manufacturers specs allowing the solids to settle, leaving only clear water to flow over the weir and into the metering flume with a composite sampler. Settled solids are pumped from the clarifier into a sludge storage tank for further clarification and concentration. Any clarified water from the sludge storage tank is returned to the main clarifier.

Disposal of Solids

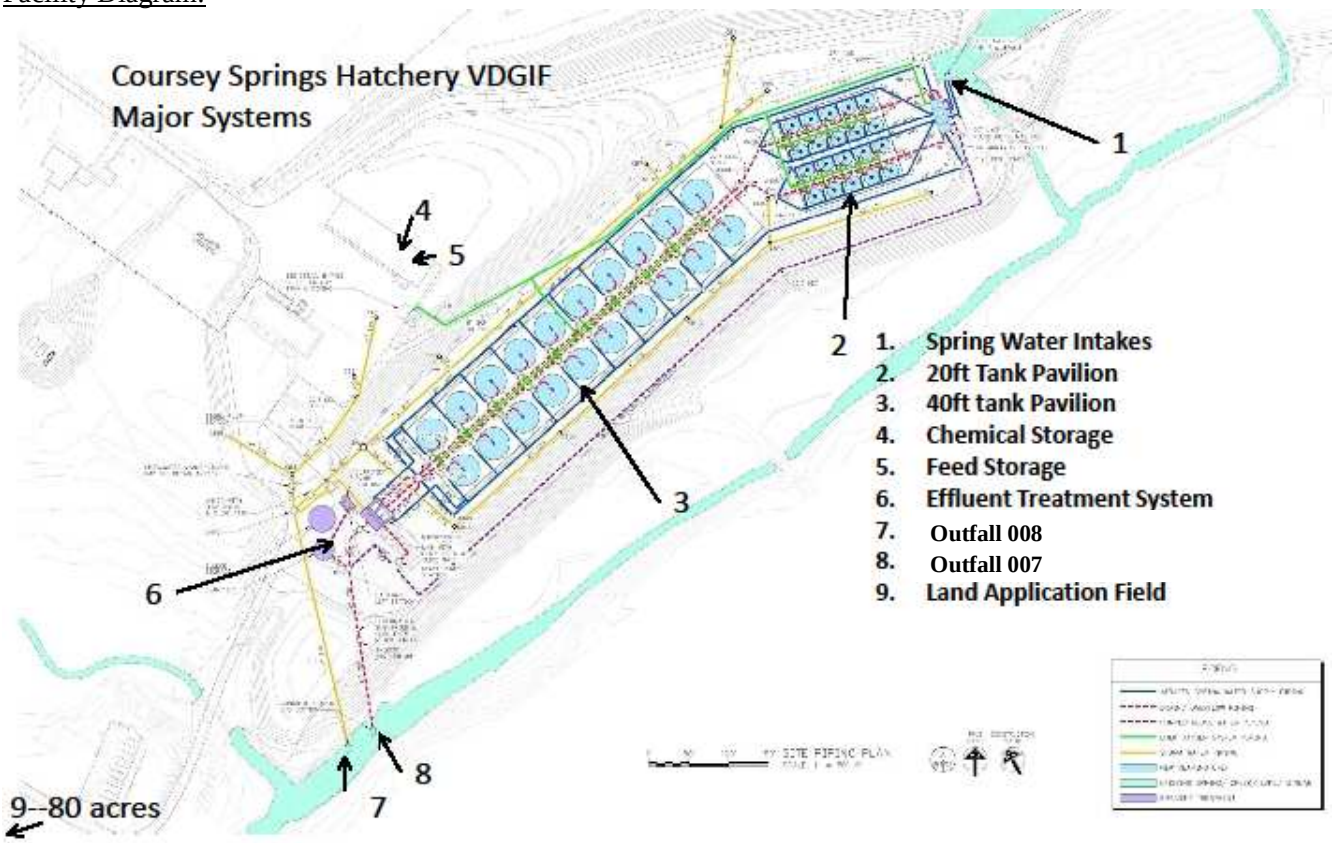
After collection, solids are applied to state-owned fields used for hay production. Further details of the land application operation are included in the approved O&M Manual.

Flow:
A portion of the flow from Coursey Spring is used by the raceways or the hatchery. The unutilized flow from Coursey Spring is a tributary to Spring Run. The discharge flows described in the previous documents and the current application are:

Application Submitted	Maximum Daily Flow	Average Monthly Flow	Units
2007	14.1	10.6	MGD
2012	12	9.5	MGD

Other Discharges from this Site:
The proposed Outfall 008 normally discharges unregulated stormwater collected from the facility site. Under flood conditions a valve can be opened in the wastewater treatment building to allow treated process wastewater to be pumped through Outfall 008. This activity would only be done during flood emergencies to prevent the flooding of the trout rearing ponds and loss of fish stocks.

Facility Diagram:

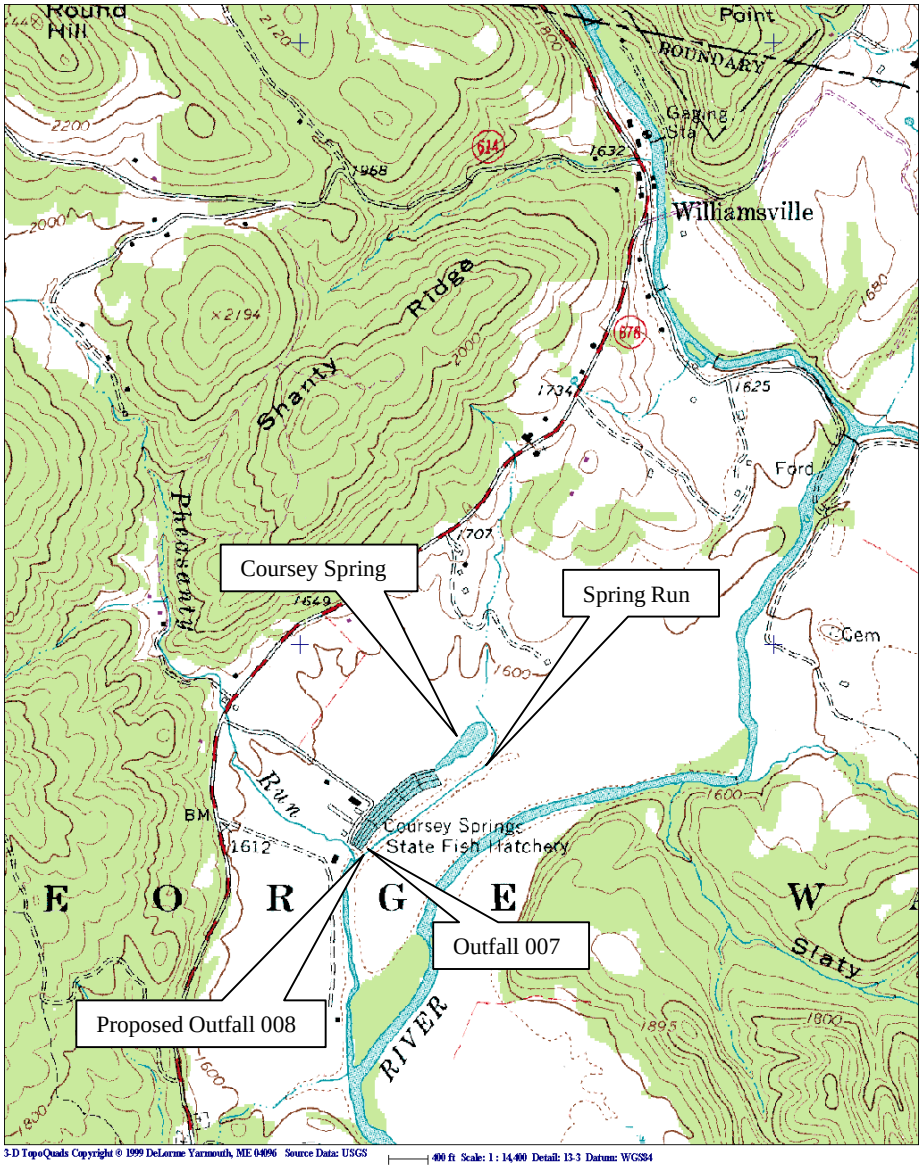


APPENDIX B

DISCHARGE LOCATION AND RECEIVING WATERS INFORMATION

This facility discharges to Spring Run via Outfalls 007 and 008 just above the confluence with Pheasanty Run. The location of the outfall is shown on the topographic map below.

A stream flow frequency determination and mixing zone analysis are deemed unnecessary because there are no monitoring data for parameters for which the Board has adopted Water Quality Criteria.



PLANNING INFORMATION

Relevant points of interest within the watershed and in the vicinity of the discharge are shown on the Water Quality Assessments Review table and corresponding map below.

WATER QUALITY ASSESSMENTS REVIEW
UPPER JAMES RIVER BASIN
10/9/2012

IMPAIRED SEGMENTS

SEGMENT ID	STREAM	SEGMENT START	SEGMENT END	SEGMENT LENGTH	PARAMETER
I14R-01-BEN	Pheasanty Run	.44	0.00	.44	Benthic
I14R-04-PH	Laurel Run	2.04	0.00	2.04	pH

PERMITS

PERMIT	FACILITY	STREAM	RIVER MILE	LAT	LONG	WBID
VA0091251	**Coursey Springs Fish Cultural Station-007**	**Spring Run**	**0.0297**	**381039**	**0793452**	**VAV-I14R**
VA0091251	**Coursey Springs Fish Cultural Station-008**	**Spring Run**	**0.0198**	**381040**	**0793452**	**VAV-I14R**

MONITORING STATIONS

STREAM	NAME	RIVER MILE	RECORD	LAT	LONG
Cow pasture River	2-CWP068.52	68.52	07/01/91	381324	0793216
Bullpasture River	2-BLP000.79	0.79	04/26/79	381143	0793414

PUBLIC WATER SUPPLY INTAKES

OWNER	STREAM	RIVER MILE
None		

WATER QUALITY MANAGEMENT PLANNING REGULATION

Is this discharge addressed in the WQMP regulation? **No**

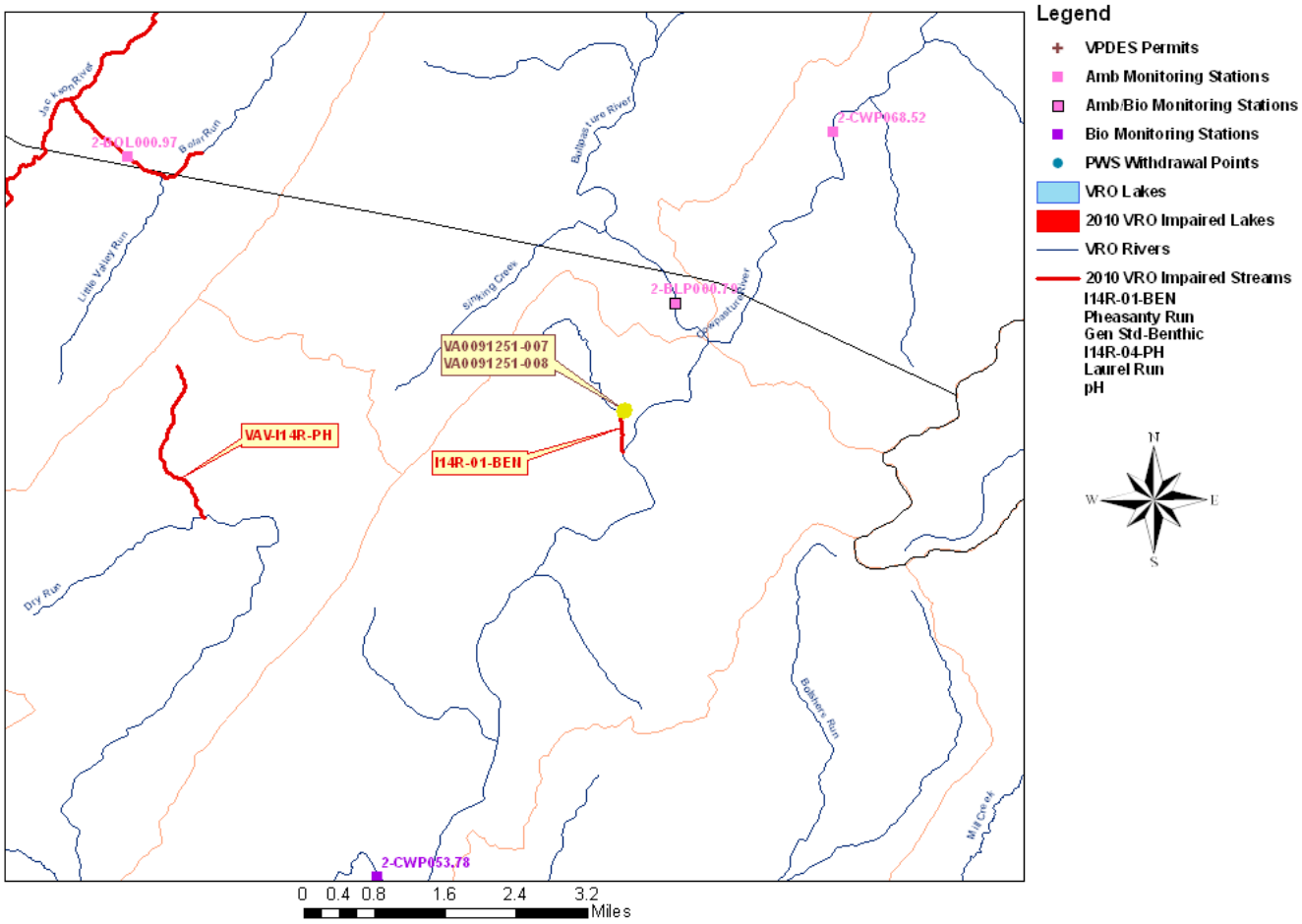
If Yes, what effluent limitations or restrictions does the WQMP regulation impose on this discharge?

PARAMETER	ALLOCATION

WATERSHED NAME

VAV-I14R Cow pasture River/Thompson Creek/Dry Run

Coursey Springs Fish Cultural Station- Water Quality Assessments Review
October 9, 2012



Fact Sheet – VPDES Permit No. VA0091251 – Coursey Springs Fish Cultural Station

NPDES PERMIT RATING WORKSHEET

Facilities identified under SIC 0273 – Animal Aquaculture and SIC 0921 – Fish Hatcheries, have the following characteristics as defined in Appendix A to the NPDES Permit Rating Work Sheet found in the VPDES Permit Manual.

1987 SIC Code Title	ELG Subcategory	ELG Subcategory Title	Human Health Toxicity Number	Total Toxicity Number	Industrial Sub-Category Number
0273 – Animal Aquaculture	NR	NR	1	1	99
0921 – Fish Hatcheries	NR	NR	1	1	99

A new Worksheet was prepared at this reissuance. The results of the review are detailed below. This Worksheet indicates a Score of **40** points.

Factor 1 – Toxic Pollutant Potential: 5 Points
The facility has one process waste stream; the discharge of water from the raceways. Toxicity Group number 1 corresponds to code 1, resulting in 5 points for this factor.

Factor 2 – Flow/Stream Flow Volume: 30 Points
The instream waste concentration (IWC) was previously determined in 2002 to be >50%. For Type II wastewaters, when the IWC is >50%, the resulting score for this factor is 30 points. The 2002 and 2008 evaluations were deemed applicable to the current discharge and receiving stream conditions, and was carried forward at this reissuance.

Factor 3 – Conventional Pollutants: 0 Points
The draft permit does not contain limits for: Oxygen Demanding Pollutants, Total Suspended Solids (TSS), or Nitrogen Pollutants. Effluent TSS are limited through the implementation of Best Management Practices.

Factor 4 – Public Health Impact: 0 Points
Using a worst case evaluation, it is assumed that there is a public drinking water supply within 50 miles downstream of the facility. A human health toxicity number of 1 corresponds to code 1, resulting in 0 points for this factor.

Factor 5.A. – A wasteload allocation has been assigned to the discharge, resulting in 10 points for this factor.

Factor 5.B. – There are no pollutants that are water quality limited in the permit.

Factor 5.C. – The permit does not contain Toxics Management Program requirements.

Factor 6. – Proximity to Near Coastal Waters: Headquarters Priority Permit Indicator (HPRI) Code #4 – This discharge occurs in a non-coastal county. This is unchanged from the previous rating.

NPDES PERMIT RATING WORK SHEET

[ ] Regular Addition
[ ] Discretionary Addition
[X] Score change, but no status change
[ ] Deletion

NPDES NO. **VA0091251**

Facility Name: **Coursey Springs Fish Cultural Station**

City: **N/A**

Receiving Water: **Spring Run**

Reach Number:

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?
1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate
[ ] YES; score is 600 (stop here) [X] NO (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

[ ] YES; score is 700 (stop here)
[X] NO (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: _____ Primary SIC Code: **0273** Other SIC Codes: _____
Industrial Subcategory Code: **99** (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
[ ] No process waste streams			[ ] 3.			[ ] 7.	7	35
[X] 1.	1	5	[ ] 4.	4	20	[ ] 8.	8	40
[ ] 2.	2	10	[ ] 5.	5	25	[ ] 9.	9	45
			[ ] 6.	6	30	[ ] 10.	10	50

Code Number Checked: **1**

Total Points Factor 1: **5**

FACTOR 2: Flow/Stream Flow Volume *(Complete either Section A or Section B; check only one)*

Section A [ ] Wastewater Flow Only Considered

Wastewater Type (See Instructions)		Code	Points
Type I: Flow < 5 MGD	[ ]	11	0
Flow 5 to 10 MGD	[ ]	12	10
Flow > 10 to 50 MGD	[ ]	13	20
Flow > 50 MGD	[ ]	14	30
Type II: Flow < 1 MGD	[ ]	21	10
Flow 1 to 5 MGD	[ ]	22	20
Flow > 5 to 10 MGD	[ ]	23	30
Flow > 10 MGD	[ ]	24	50
Type III: Flow < 1 MGD	[ ]	31	0
Flow 1 to 5 MGD	[ ]	32	10
Flow > 5 to 10 MGD	[ ]	33	20
Flow > 10 MGD	[ ]	34	3

Section B [X] Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III:	< 10 %	[ ]	41	0
	10 % to < 50 %	[ ]	42	10
	> 50 %	[ ]	43	20
Type II:	< 10 %	[ ]	51	0
	10 % to <50 %	[ ]	52	20
	> 50 %	[X]	53	30

Code Checked from Section A or B: **53**

Total Points Factor 2: **30**

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutant: (check one) [ ] BOD [ ] COD [ ] Other: N/A

			Code	Points
Permit Limits: (check one)	[ ]	< 100 lbs/day	1	0
	[ ]	100 to 1000 lbs/day	2	5
	[ ]	> 1000 to 3000 lbs/day	3	15
	[ ]	> 3000 lbs/day	4	20

Code Checked : **N/A**

Points Scored: **N/A**

B. Total Suspended Solids (TSS)

			Code	Points
Permit Limits: (check one)	[ ]	< 100 lbs/day	1	0
	[ ]	100 to 1000 lbs/day	2	5
	[ ]	> 1000 to 5000 lbs/day	3	15
	[ ]	> 5000 lbs/day	4	20

Code Checked : **N/A**

Points Scored: **N/A**

C. Nitrogen Pollutant: (check one) [ ] Ammonia [ ] Other: N/A

		Nitrogen Equivalent	Code	Points
Permit Limits: (check one)	[ ]	< 300 lbs/day	1	0
	[ ]	300 to 1000 lbs/day	2	5
	[ ]	> 1000 to 3000 lbs/day	3	15
	[ ]	> 3000 lbs/day	4	20

Code Checked : **N/A**

Points Scored: **N/A**

Total Points Factor 3: **0**

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.

[X]YES (If yes, check toxicity potential number below)

[ ] NO (If no, go to Factor 5)

Determine the human health toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column [ ] check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
[ ] No process waste streams	0	0	[ ] 3.	3	0	[ ] 7.	7	15
[X] 1.	1	0	[ ] 4.	4	0	[ ] 8.	8	20
[ ] 2.	2	0	[ ] 5.	5	5	[ ] 9.	9	25
			[ ] 6.	6	10	[ ] 10.	10	30

Code Number Checked : **1**

Total Points Factor 4: **0**

FACTOR 5: Water Quality Factors

A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge:

		Code	Points
[X]	Yes	1	10
[ ]	No	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

		Code	Points
[ ]	Yes	1	0 N/A
[ ]	No	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

		Code	Points
[ ]	Yes	1	10
[X]	No	2	0

Code Number Checked : A 1 B N/A C 2

Total Points Factor 5: A **10** + B **N/A** + C **0** = **10** TOTAL

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from Factor 2): **53**

Enter the multiplication factor that corresponds to the flow code: **0.60**

Check appropriate facility HPRI Code (from PCS):

	HPRI#	Code	HPRI Score	Flow Code	Multiplication Factor
[ ]	1	1	20	11, 31, or 41	0.00
[ ]	2	2	0	12, 32, or 42	0.05
[ ]	3	3	30	13, 33, or 43	0.10
[X]	4	4	0	14 or 34	0.15
[ ]	5	5	20	21 or 51	0.10
				22 or 52	0.30
				23 or 53	0.60
				24	1.00

HPRI code checked: 4

Base Score: (HPRI Score) **0** x (Multiplication Factor) **0.60** = **0** (TOTAL POINTS)

B. Additional Points --- NEP Program
For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay? **N/A**

	Code	Points
[ ] Yes	1	10
[ ] No	2	0

C. Additional Points --- Great Lakes Area of Concern
For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see Instructions)? **N/A**

	Code	Points
[ ] Yes	1	10
[ ] No	2	0

Code Number Checked : A 0 B N/A C N/A

Points Factor 6: A **0** + B **N/A** + C **N/A** = **0** TOTAL

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	**5**
2	Flows/Stream Flow Volume	**30**
3	Conventional Pollutants	**0**
4	Public Health Impacts	**0**
5	Water Quality Factors	**10**
6	Proximity to Near Coastal Waters	**0**
	TOTAL (Factors 1-6)	**45**

S1. Is the total score equal to or greater than 80? [ ] Yes (Facility is a major) [X] No

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

[X] No

[ ] Yes (Add 500 points to the above score and provide reason below:

Reason: _____

New Score: **45**

Old Score: **40**

Eric Millard
Permit Reviewer's Name

540-574-7813
Phone Number

November 30, 2012
Date

APPENDIX C

EFFLUENT SCREENING AND EFFLUENT LIMITATIONS

EFFLUENT LIMITATIONS

A comparison of technology and water quality-based limits was performed and the most stringent limits were selected, as summarized in the table below.

Outfall 007 **Final Limits** **Design Flow: 11.52 MGD**

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average		Maximum		Frequency	Sample Type
Flow (MGD)	1	NL		NL		1/Month	Estimate
TSS	2,3	NL mg/L	NL kg/d	NL mg/L	NL kg/d	1/Month	Composite
Suspended Solids, Monthly Load (lb/month)	4	NA		NL		1/Month	Calculated
Suspended Solids, Year to Date (lb/year) *	4	NA		NL		1/Month	Calculated

Outfall 008 **Final Limits** **Design Flow: 11.52 MGD**

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average		Maximum		Frequency	Sample Type
Flow (MGD)	1	NL		NL		1/Month	Estimate
TSS	2,3	NL mg/L	NL kg/d	NL mg/L	NL kg/d	1/Month	Composite
Suspended Solids, Monthly Load (lb/month)	4	NA		NL		1/Month	Calculated
Suspended Solids, Year to Date (lb/year) *	4	NA		NL		1/Month	Calculated

** = Report Year to Date load as the sum of the monthly lb/month load values during the calendar year.*
NL = No Limitation, monitoring required
Composite = Combination of eight or fewer hourly grab samples, collected over the duration of a normal operating day during periods of representative discharges, including discharges during fish harvesting, unit cleaning, and/or solids removal operations.

BASIS DESCRIPTIONS

1. VPDES Permit Regulation (9 VAC 25-31)
2. Best Professional Judgment (BPJ)
3. General VPDES Permit for Concentrated Aquatic Animal Production Facilities. VAG131000. Effective Date: March 5, 1998. Expiration Date: March 5, 2003.
4. EPA directive from 2/7/08 conference call.

LIMITING FACTORS – OVERVIEW:
The following potential limiting factors have been considered in developing this permit and fact sheet:

Water Quality Management Plan Regulation (WQMP) (9 VAC 25-720)	
A. TMDL limits	**TSS via approved BMPs**
B. Non-TMDL WLAs	**None**
C. CBP (TN & TP) WLAs	**None**
Federal Effluent Guidelines	**40 CFR 451**
BPJ/Agency Guidance limits	**TSS**
Water Quality-based Limits - numeric	**None**
Water Quality-based Limits - narrative	**None**
Technology-based Limits (9 VAC 25-40-70)	**None**
Whole Effluent Toxicity (WET)	**Not applicable**
Storm Water Limits	**Not applicable**

EVALUATION OF THE EFFLUENT:

The 1998[1] Fact Sheet (FS) developed for the issuance of the General Permit for Concentrated Aquatic Animal Production Facilities documented the state-wide evaluation of the discharges authorized by individual VPDES Permits for these facilities. The FS documented the review of the available effluent data and determined that: 1) Ammonia-N, Dissolved Oxygen, BOD, Temperature, pH and Nutrients are not significant in the discharges; 2) Ammonia-N, Dissolved Oxygen, BOD, pH and Nutrients are associated with solids (controlled by TSS and SS limitations); 3) there is no evidence for Oxygen depletion due to BOD; 4) Ammonia-N was present in low concentrations and limits were not required when performing a reasonable potential analysis for toxics under worst case conditions; and 5) nutrients were at low levels consistent with the nutrient policy. This new information satisfied the exception to the antibacksliding policy and no limits for these parameters were imposed in the individual permits issued in 2003.

The 1998 FS also documents benthic surveys performed 1995-1996 that indicated impacts to the benthos from solids. Technology-based effluent limits for Total Suspended Solids (TSS) and Settleable Solids (SS), with concurrent flow monitoring, were imposed in the General Permit based on Agency guidance.[2] A water quality based special condition was also imposed as a performance criterion for organic solids to ensure that the general standard is maintained. The previous permit modification involved removing the interim and final numeric TSS limits and adding language requiring the installation of BMPs consist with the approved TMDL recommendation. The TMDL WLA is included in the permit and effective implementation of BMPs designed to meet the TMDL objective is required.

The evaluation of possible stressors performed during the development of a TMDL[3] for streams impacted by trout farms considered potential impacts from Ammonia-N (toxic), low DO, temperature, or pH. All instream data for these parameters downstream from these facilities were consistently better than the instream WQS. Nutrients (N and P) were considered probable stressors; however, the TMDL advisory panel of experts concluded that management activities to control solids would also control excess nutrients reaching the impaired streams. Organic solids (OS) were determined to be the critical stressor to the benthic macroinvertebrate community. The TMDL established effluent loads and limitations for TSS that would provide adequate controls for OS. Effluent limitations for SS were not carried forward from the General Permit to this individual permit in 2003 because OS was considered the critical stressor in the discharge. It was documented in the 2002 Fact Sheet[4] for issuance of this permit that deleting the limits for SS based on new information qualified for the exemption to backsliding provided at 9 VAC 25-31-220.L.2.b.(1). The DGIF currently employs multiple BMPs at this facility, as recommended in the TMDL[3] report. In March 2010, DGIF began using the upgraded effluent micro filtration system.

A table comparing the BMPs recommended in the TMDL report with the actions DGIF is and will be taking to meet the TMDL goal follows:

BMPs recommended in the TMDL report for achieving this allocation include:	**BMPs currently being implemented at the facility include:**	**Proposed improvements:**
End-of-raceway settling basins with 20-30 minute retention times	Installation of a full effluent flow micro filtration system	None
Redesigning sediment traps to have longer retention times	Installation of a full effluent flow micro filtration system	None
Frequently cleaning the settling basins and sediment traps	New effluent filters will automatically backwash to a new wastewater clarifier.	None
Concentrating waste solids in an off-line settling basin	Installation of a clarifier for treating the filtration system backwash wastewater Installation of a waste solids storage tank	None
Properly land applying the waste solids	Proper land application of waste solids in accordance with the approved SMP.	Proper land application of waste solids in accordance with the approved SMP.
Continued use of high energy, low waste feed	Continued use of high energy, low waste feed	Continued use of high energy, low waste feed

The facility meets the definition of "concentrated aquatic animal production facilities" as defined at 40 CFR 122.24[5] and Appendix C of 40 CFR Part 122[5]. The facility also has an annual production level of 100,000 pounds or more of aquatic animals making the discharge subject to additional regulations under the Effluent Limitation Guideline at 40 CFR 451.[6] These requirements, defined at 40 CFR 451.11 for the larger production facilities, are addressed in the currently approved O&M Manual.

The facility average flow was established as 11.52 MGD at this reissuance based on the design average wastewater treatment capacity at the renovated facility. Flow to the facility is controlled by the Coursey Spring output, which is variable based on prevailing climatic conditions and resultant groundwater table elevation.

Based on information provided by the permittee, the estimated chloride effluent concentration during dosing is 3.8 mg/L. This estimate is based on applying 600 lbs of NaCl over a 4-hr period. Conservatively assuming a receiving stream background chloride concentration of 0 mg/L and zero flow available for mixing, the effluent concentration should not exceed 860 mg/L to ensure chloride WQS criteria are met. As a condition of the reissued permit, the permittee will be required to sample for chloride on all occasions when dosing the raceways with NaCl. This permit allows the introduction of new chemicals (for example to treat food, water or the trout) upon notice to and approval by DEQ.

There are no other data to evaluate.

A follow-up benthic survey of Pheasanty Run will be conducted by DEQ in 2013.

References:

1. Fact Sheet for Issuance of a General VPDES Permit to Discharge to State Water and State Certification under the State Water Control Law. (Effective Date: March 5, 1998. Expiration Date: March 5, 2003)

2. Guidance Memo No. 98-2004. Implementation Guidance for VPDES General Permit VAG131000, Concentrated Aquatic Animal Production Facilities.

3. Benthic TMDL Reports for Six Impaired Stream Segments in the Potomac-Shenandoah and James River Basins. Submitted by Virginia Department of Environmental Quality and Virginia Department of Conservation and Recreation. Prepared by The Virginia Water Resources Research Center, Virginia Tech. April 29, 2002.

4. Fact Sheet for Issuance of VPDES Permit No. VA0091251 drafted by C. Kemper Loyd on November 20, 2002, with modification by Brandon D. Kiracofe on February 23, 2005.

5. 40 CFR Part 122 - EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, 40 CFR Part 122.24 - Concentrated aquatic animal production facilities (applicable to State NPDES programs, Appendix C to 40 CFR Part 122 - Criteria for Determining a Concentrated Aquatic Animal Production Facility.

6. 40 CFR Part 451 - Concentrated Aquatic Animal Production Point Source Category, Subpart A—Flow-Through and Recirculating Systems

APPENDIX D

BASES FOR PERMIT SPECIAL CONDITIONS

Tabulated below are the sections of the permit, with any changes and the reasons for the changes identified. Also provided is the basis for each of the permit special conditions.

Cover Page
- Content and format as prescribed by the VPDES Permit Manual.
- Removed Pheasanty Run (001-004) outfalls, and Spring Run (005-006) outfalls
- Included Spring Run outfall 008

Part I.A.1. **Effluent Limitations and Monitoring Requirements (Outfall 007):**
Identical to Part I.A.3. of the previous permit.

Part I.A.2. **Effluent Limitations and Monitoring Requirements (Outfall 008):**
New requirement.

Part I.B. **Effluent Limitations and Monitoring Requirements – Additional Instructions:** *Identical to Part I.B. of the previous permit.*

Part I.C.1. **Materials Handling/Storage:** *Identical to Part I.C.1. of the previous permit***.** 9 VAC 25-31-280.B.2. requires that the types and quantities of "wastes, fluids, or pollutants which are … treated, stored, etc." be addressed for all permitted facilities.

Part I.C.2 **O&M Manual Requirement:** *Updates Part I.C.2. of the previous permit.* Code of Virginia at 62.1-44.16, VPDES Permit Regulation 9 VAC 25-31-190 E, and 40 CFR 122.41(e) require proper operation and maintenance of the permitted facility.

Part I.C.3. **BMPs and Wastewater Treatment Facilities:** *Updates Part I.C.3. of the previous permit.* Requires approved Best Management Practices (BMPs) and wastewater treatment facilities to be implemented and/or operated on a continual basis. Changes to the BMP plan or planned wastewater treatment facilities shall be submitted for staff approval within 90 days of the effective date of the changes. Applied to the permit using Best Professional Judgment in conjunction with EPA comment and concurrence.

Part I.C.4. *Identical to Part I.C.4. of the previous permit.* Requires permittee to notify DEQ within 14 days of completion of construction of any project for which a Concept Engineering Report has been approved. § 62.1-44.16 of the Code of Virginia requires industrial facilities to obtain DEQ approval for proposed discharges of industrial wastewater.

Part I.C.5. **Reopeners:**
a. *New Requirement:* Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.
b. *Updates Part I.C.5. of the previous permit:* 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

Part I.C.6. **Notification Levels:** *Identical to Part I.C.4. of the previous permit.* Required by the VPDES Permit Regulation 9 VAC 25-31-200 A for all manufacturing, commercial, mining, and silvicultural dischargers.

Part I.C.7. **Outfall 008 Monitoring:** *New requirement.*

Part I.C.8. *Identical to Part I.C.8. of the previous permit.* Prohibits the discharge of sewage and is required since sewage wastewater discharges were not evaluated for limits under this permit.

Part I.C.9. *Identical to Part I.C.9. of the previous permit.* Prohibits the discharge of fish processing wastewater and is required since fish processing wastewater discharges were not evaluated for limits under this permit.

Part I.C.10. *Identical to Part I.C.10. of the previous permit.* Prohibits discharges containing unapproved chemicals, toxic chemicals, or chlorine and is required since those parameters were not evaluated for limits under this permit. DEQ shall have the opportunity to review and approve the use of all chemicals used in the production operation through the O&M Manual review and approval process.

Part I.C.11. *Identical to Part I.C.8. of the previous permit.* The prohibition of the discharge of excess organic solids is based on the narrative section of the WQS regulation.

Part I.C.12. **Water Quality Criteria Monitoring.** *Updates Part I.C.12. of the previous permit.* State Water Control Law at 62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for chloride.

Part II **Conditions Applicable to All VPDES Permits:** *Updates to Part II of previous permit.* VPDES Permit Regulation 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed. Part II,A.4. language added for Virginia Environmental Laboratory Accreditation Program (VELAP) per 1 VAC 30, Chapter 45: Certification for Noncommercial Environmental Laboratories, and 1 VAC 30, Chapter 46: Accreditation for Commercial Laboratories.

DELETIONS

Tabulated below are the sections of the previous permit that were deleted and the basis for this action.

Part I.A.1. Effluent limitations page for the facility prior to upgrade.

Part I.A.2. Effluent limitations page for the facility prior to upgrade.

Part I.C.7. Representative Outfalls: Not necessary with the upgraded facility as the primary outfall used is a single outfall.

Part. I.C.13. Cowpasture River Stream Restoration Requirement: Restoration activity has already occurred.